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## PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)

EATNP146US

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]

on December 21, 2007

Signature /Leslie Ann Menges/

Typed or printed name Leslie Ann Menges

Application Number

10/702,368

Filed

November 6, 2003

First Named Inventor

William F. DiVergilio

Art Unit

1763

Examiner

Rudy Zervigon

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

☐

applicant/inventor.

☐

assignee of record of the entire interest.  
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.  
(Form PTO/SB/96)

☒

attorney or agent of record.  
Registration number 36,981

☐

attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34 \_\_\_\_\_

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December 21, 2007

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below\*.

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\*Total of \_\_\_\_\_ forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Docket No. EATNP146US

02-IMP-068

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re **PATENT** application of:

Applicant: William F. DiVergilio et al.

Application No.: 10/702,368

For: SEGMENTED RESONANT ANTENNA FOR RADIO FREQUENCY  
INDUCTIVELY COUPLED PLASMAS

Filing Date: November 6, 2003

Examiner: Rudy Zervigon

Art Unit: 1763

**PRE-APPEAL BRIEF IN RESPONSE TO ADVISORY ACTION**

**DATED OCTOBER 25, 2007**

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Favorable reconsideration of the above-identified application is respectfully requested in view of the following remarks.

**REMARKS**

Claims 13-18 and 20-29 are currently pending in the application.  
Reconsideration of the application in light of the following remarks is respectfully requested.

**I. REJECTION OF CLAIMS 13-25 UNDER 35 U.S.C. § 103(a)**

Claims 13-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over WO 2001/63981 (Weiler) in view of U.S. Patent 5,846,883 (Moslehi). Withdrawal of the rejection is requested for at the least the following reasons.

- i. ***The combination of Weiler and Moslehi is improper because a combination thereof will render Weiler unsatisfactory for its intended purpose.***

Claim 13 recites an ion shower system having a plasma source that comprises a plurality of conductor segments and a plurality of capacitors serially connected through the conductor segments. As conceded in the Office Action, Weiler does not teach this feature, however, the Office Action asserts that Moslehi does teach this feature and that it would have been obvious to arrive at the feature of claim 13 by combining together Weiler and Moslehi. (See, O.A., 3/12/07, p. 9). Applicant respectfully disagrees for at least the following reasons. (Note that reference to the teachings of Weiler reference U.S. Patent No. 6,936,144 that claims priority to the WO reference).

More particularly, Weiler discloses in Figs. 1 and 2a-2j (and corresponding text) a plasma source having a plasma excitation electrode. As shown in Figs. 2a-2j, the excitation electrode (that corresponds to the claimed conductor segment of claim 13 according to the Office Action) may comprise a single element or multiple segments. (See, e.g., Figs. 2e-2j). ***In instances where the excitation electrode 3 consists of multiple segments, each segment or electrode is connected to its own separate matching network and its own separate high frequency generator.*** (See, e.g., Col. 4, lines 27-30). According to Weiler, connecting each electrode segment to its own separate power source (generator) is provided ***to generate different kinds of plasmas so as to control and adjust beam characteristics.*** (See, e.g., Col. 4, lines 30-33). Thus an intended purpose of Weiler is to have flexibility to generate different kinds of plasmas by being able to individually address or drive each electrode segment.

Therefore one of ordinary skill in the art would not be motivated to modify the multiple, isolated electrode segment configurations of Weiler by serially coupling such segments together *via* capacitors because doing so would contravene an intended purpose of Weiler (which was to separately drive each segment with its own power source to generate different plasmas and thus control and adjust beam characteristics) by eliminating the ability to generate different plasmas by individually driving the various conductor segments. Accordingly, withdrawal of the rejection is respectfully requested.

**ii. Neither Weiler nor Moslehi teach a series connection of capacitors and conductor segments residing within the chamber, as recited in claim 1.**

Claim 13 recites that the series arrangement of conductor segments and capacitors resides **within the chamber**. Even if a combination of Weiler and Moslehi were proper, the combination does not teach the invention of claim 1 for at least the following reasons.

Both Weiler and Moslehi were analyzed to ascertain whether either reference provided a teaching of an arrangement within a chamber. The Office Action conceded that Moslehi explicitly teach a series arrangement of conductor segments and capacitors **external** to the chamber. (O.A., 8/23/07, p. 9, paragraph 11). While the Office Action asserts that Weiler does teach conductor segments in its chamber, applicant respectfully submits that the conclusion drawn therefrom that any capacitors serially coupled to the conductors would also be in the chamber is incorrect.

With reference to Fig. 1 of Weiler, the outer wall 7 of the chamber defines three sides of the chamber, while a contoured mounting element 1 defines the fourth chamber side. While the excitation electrodes 3 reside inside the chamber, **they electrically connect to their respective power source 8** via a conductor that extends **outside of the chamber** via a feedthrough 9. Consequently, **the electrical connection of an excitation electrode to any other components** (the matching network 2 and RF source 8) **happens external to the chamber** (i.e., on the opposite side of the mounting element 1 than the electrode 3). Therefore one of ordinary skill in the art, upon evaluating Weiler as a whole, would couple a capacitor to a respective excitation electrode 3 at the end of the external conductor that extends into the chamber **via the feedthrough 9**, just as the matching network 2 and RF source are connected to the electrode **outside of the chamber**. This characterization of Weiler is further supported by the teaching of Weiler, wherein the magnetic field coils 4 are also located **external** to the chamber 7 **via the contoured mounting element 1**, as illustrated in Fig. 1.

Therefore neither reference provides any support for a series arrangement of conductor segments and capacitors ***within the chamber*** as claimed. Therefore a withdrawal of the rejection of claim 13 is respectfully requested for at least this additional reason.

***iii. The combination of Weiler and Moslehi does not teach an azimuthally symmetric arrangement of the conductor segments and capacitors, as recited in claim 20.***

Claim 20 depends upon claim 13, and further recites that the ***series arrangement*** of conductor segments ***and*** capacitors are arranged within the chamber ***in an azimuthally symmetric fashion***. Initially, Moslehi does not teach the ***capacitors arranged azimuthally symmetric within the chamber*** as recited in the claimed invention. While ***conductor*** segments 186, 190 and 194 in Fig. 2 of Moslehi are arranged azimuthally, ***the capacitors that couple such segments together are not arranged in the azimuthally symmetric fashion as claimed***. Rather, such capacitors follow the direction of the jumper water channels 214, 218, 226 and 230 illustrated in Fig. 2, and which is NOT azimuthally symmetric. ***Weiler does not remedy the deficiencies of Moslehi***. In Figs. 2e-2j, none of the multiple conductor segment configurations are arranged azimuthally.

In the Office Action, it states that Weiler teach conductor segments that are azimuthally symmetric, citing to element 3 of Figs. 1, 2 and 4, respectively. In looking at Figs. 2a-2j, it is noted that only Figs. 2e-2j illustrates multiple conductor segments. ***Of those figures, none of them show the conductor segments arranged azimuthally.***

For example, in Fig. 2j, four conductor segments are arranged in a square, but such segments are not arranged azimuthally as claimed. Therefore neither reference teach this arrangement, either alone or in combination. Consequently, claim 20 is non-obvious over the cited art. Accordingly, for at least this additional reason, withdrawal of the rejection is respectfully requested.

***iv. The combination of Weiler and Moslehi does not teach a plurality of multi-cusp magnets on side portions of the chamber, as recited in claim 23.***

Claim 23 depends upon claim 13, and further recites that side portions of the chamber comprise a plurality of **multi-cusp magnets** operable to produce multi-cusp magnetic fields. The combination of the cited references does not teach this feature.

Contrary to the assertion within the Office Action (see O.A., p. 6), Weiler does not teach a plurality of multi-cusp magnets as claimed. Weiler does teach a magnetic field coil arrangement, as illustrated in Fig. 1, however, such coil arrangement does not constitute multi-cusp magnets and do not produce multi-cusp fields as claimed.

Weiler clearly show a magnetic field coil arrangement 4 and such coil arrangements are typically employed to generate a generally uniform dipole field therebetween. ***A plurality of multi-cusp magnets is not the same as the coil arrangement of Weiler, and a dipole magnetic field is not anything similar to a plurality of multi-cusp magnetic fields,*** and such a distinction is well known and appreciated by one of ordinary skill in the art.

Therefore claim 23 is non-obvious over the cited art for at least this additional reason. Accordingly, withdrawal of the rejection of claim 23 and depending claims 24-25 is respectfully requested.

## **II. CONCLUSION**

Should any fees be due as a result of the filing of this response, the Commissioner is hereby authorized to charge the Deposit Account Number 50-1733, EATNP146US.

Respectfully submitted,  
ESCHWEILER & ASSOCIATES, LLC

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